

Reply Brief  
Serial No. 10/069,691  
Attorney Docket No. PZ9947

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of : Gill et al.  
Application No. : 10/069,691  
Filing Date : June 3, 2002  
Art Unit : 1618  
Title : Improved Container Composition for Radiopharmaceutical Agents  
Docket No. : PZ9947 US

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**REPLY BRIEF**

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## **I. STATUS OF CLAIMS**

Claims 1-14 are pending in this application. The Examiner has rejected all of these claims. Appellants are appealing the rejections of Claims 1-14.

## **II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The issues for review in this appeal arise from an Examiner's Answer that was mailed on July 24, 2008. The Examiner rejects claims 1-14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,961,952 ("Crane") in view of JP 11-99192 ("Yamaguchi") in further view of DE 29609958 ("Schott Glaswerke") or U.S. Patent No. 6,200,658 ("Walther").

## **III ARGUMENT**

Appellants respectfully point out here that they are only addressing the Examiner's Answer ("Answer") dated July 24, 2008 herein. Please see Appellants Appeal Brief dated May 9, 2008 ("Appeal Brief") for a complete Responsive Brief.

Appellants respectfully request that The Board of Patent Appeals and Interferences ("Board") should reverse the Examiner's rejection based on the Examiner's Answer for the reasons set forth below.

On page 5 of the Examiner's Response to Appellants, the Examiner believes that the silica coating of Yamaguchi has two functions: (i) preventing absorption of "highly adsorbable radiopharmaceuticals"; and (ii) providing a clear description of the vial contents. The latter point made by the Examiner is incorrect. The aspect of Yamaguchi providing a clear

description of the vial contents has nothing to do with the silica coating – it is due to reversed characters (i.e. text), which is a separate feature of Yamaguchi. Yamaguchi makes this clear at: Claim 2; [0004], [0010]; [0016]; [0017]; [0018]; [0020]; Example 2 [0027] – [0029]; Example 3 [0030] – [0031] and Figure 3. The Examiner has ascribed a teaching to Yamaguchi which contradicts the document itself. Indeed, it would be severely problematic to suggest that a silica coating *per se* could describe the contents of a container/vial.

Appellants have acknowledged in their Appeal Brief that Yamaguchi teaches the use of silica-coated vials for radiopharmaceuticals in general. It is also the case, however, that the only specific teaching of Yamaguchi is for the radioisotope <sup>201</sup>Tl. Accordingly, Appellants have argued at length that silica-coated vials have unexpected advantages for radiopharmaceuticals which are metal complexes of ligands (i.e. the present invention).

Appellants respectfully point out here that it is well settled in the law that a reference must be considered not just for what it expressly teaches, but also for what it fairly suggests to one who is unaware of the claimed invention. *In re Baird*, 16 F.3d 380, (Fed. Cir. 1994).

Furthermore, on page 6 of the Examiner's Answer the Examiner states that Walther teaches:

“The interior surface may be coated with SiO<sub>2</sub> (silicon dioxide, commonly

known as silica)...”

This is a highly-selective description. Walther teaches that the coating should be an “oxide material” (Walther abstract; claim 1; column 3 lines 33-39; Column 5 (lines 5-9).

Walther describes preferred oxides at Column 4 (lines 40-42):

“...the following oxides may be used, among others, as coating materials:

SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> or mixtures thereof”.

The oxide coatings taught by Walther are thus:

- any “oxide material”

SiO<sub>2</sub>

Al<sub>2</sub>O<sub>3</sub>

TiO<sub>2</sub>

SiO<sub>2</sub> + Al<sub>2</sub>O<sub>3</sub>

SiO<sub>2</sub> + TiO<sub>2</sub>

Al<sub>2</sub>O<sub>3</sub> + TiO<sub>2</sub>

SiO<sub>2</sub> + Al<sub>2</sub>O<sub>3</sub> + TiO<sub>2</sub>

The disclosure of Walther is thus much broader than SiO<sub>2</sub> alone, since the term “oxide material” encompasses almost any element. That, and the specific listing above, demonstrates that of the coatings taught by Walther are not silica. The Examiner’s selection of SiO<sub>2</sub> alone is clear evidence of an invalid hindsight selection.

Appellants note that “the prior art itself must provide a motivation or reason for the worker in the art, without the benefit of the Applicant’s specification, to make necessary changes in the reference device”. See, *Ex parte Chicago Rawhide Manufacturing Co.*, 226 U.S.P.Q. 438 (PTO Bd. App. 1984).

Additionally, the coatings taught by Schott Glaswerke are in fact:

“...oxides and/or nitrides of the elements Si, Ti, Ta, Al or mixtures thereof...”

(Schott Glaswerke at claim 1 plus page 2 first paragraph).

Schott Glaswerke does teach that SiO<sub>2</sub> is preferred, but the teaching of the document ‘read as a whole’ is far broader than SiO<sub>2</sub> alone. The Examiner has therefore been highly selective in his representation of the teaching of Schott Glaswerke.

Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051 (Fed. Cir. 1988). (emphasis added).

The Examiner cites five (5) alleged motivations to combine references (at page 7 of the Examiner’s Answer). The first refers to “various advantages” of using silica-coated vials. That is simply too vague a possibility to provide the necessary motivation for the person skilled in the art.

The second asserts that Yamaguchi and Schott Glaswerke disclose advantages of silica-coated vials for radiopharmaceuticals. Appellants challenge the latter assertion – Schott Glaswerke refers merely to “diagnostic agents” without any further description of what is meant by the term. It is improper to attribute a teaching to Schott Glaswerke which simply is not there.

The third motivation is allegedly to take advantage of known advantages of silica coatings. The Examiner cites avoiding leaching of ions and to “provide a clear description of the container contents”. If the person skilled in the art were motivated to achieve the latter, he would need to adopt the teaching of Yamaguchi on reverse lettering, not the silica coating. That would teach away from the present invention and could provide no motivation to employ silica coatings. In previous Office Actions, the Examiner has argued that the person skilled in the art would always employ all features taught be the prior art to be advantageous, unless the prior art provided a clear teaching not to do so. If that were the case, the combination [Crane] + [Yamaguchi] would inevitably lead to the use of silica coated vials which also have the feature of reversed text (to show the vial contents). The vials of the present invention do not have the latter feature. Hence, the combination of Crane and Yamaguchi teaches away from the subject matter of the present invention.

Accordingly, a reference may be said to teach away when a person of ordinary skill, upon [examining] the reference would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant [emphasis added].

*Para-Ordnance Mfg. v. SGS Importers Int’l*, 73 F.3d 1085 (Fed. Cir. 1995).

Therefore, Appellants submit that, contrary to the Examiner's assertions, one improvement can teach away from another, the two improvements may diverge from each other in their teachings.

Another alleged motivation (avoiding leaching of ions) is not described in Yamaguchi as a problem for radiopharmaceuticals. Yamaguchi describes the mechanism of his invention at [0013] and [0014], where the concern is clearly adsorption of the  $^{201}\text{Tl}$  (as the monovalent thallium cation  $\text{Tl}^+$ ) *via* exchange with the potassium ions ( $\text{K}^+$ ) of the glass. Yamaguchi makes this clear at [0015], by referring to the “equilibrium reaction between thallium and potassium”. The Examiner's alleged motivation does not exist within Yamaguchi itself.

The Examiner's fourth alleged motivation does not relate to silica-coated vials, so is not relevant to any motivation to employ silica-coated vials in radiopharmaceuticals kits.

The Examiner's fifth alleged motivation relates to PCVD as a method of silica deposition – it does not relate to the combination of references (in particular Crane).

The Examiner also argues on pages 7 and 8 of the Examiner's Answer that Crane, Yamaguchi and Schott Glaswerke are all directed to radiopharmaceuticals, and hence combinable. As argued above, that categorisation is incorrect for Schott Glaswerke. The Examiner also argues that Schott Glaswerke/Yamaguchi/Walther are all combinable, since all 3 relate to silica-coated glass interiors. The relevance of the latter is unclear, since the key issue is



the combination with Crane. Any combination of Schott Glaswerke/Yamaguchi/Walther without Crane would not lead to the present invention.

Appellants note the Examiner's statement (with respect to Crane) on page 8 of the Examiner's Answer, that the "motivation to modify an invention is based on the reference teachings as a whole". The Examiner is certainly applying a broad view of the teachings of Crane, but applies a very selective approach to the teachings of Schott Glaswerke and Walther. What is valid for the reading of one reference must be valid for another, otherwise dual standards are being applied. If this 'reference teachings as a whole' logic is followed, then Schott Glaswerke and Walther simply cannot be used in the manner argued by the Examiner, since their teachings are much broader than those ascribed to them.

The Examiner's arguments in the Response to Argument section (beginning on page 8) mischaracterises the nature of the present invention. The present invention is a selection invention where unexpected advantages for radiopharmaceuticals that are metal complexes of ligands have been found. The novelty lies in the selection, where the claimed subject matter has unforeseen advantages. The general teaching of Yamaguchi on radiopharmaceuticals in general is acknowledged, but needs to be considered in the context of a selection invention. As noted previously, the Examiner's argumentation here could effectively render obvious (and hence bar from patentability) all selection inventions.

The Examiner argues (page 10) that the skilled artisan would recognise that "radiopharmaceuticals are part of diagnostic agents and pharmaceutical agents". Appellants regard that statement as an unsubstantiated assertion. It is more an argument as to whether

Walther could represent a dominating patent, than an analysis of patentability. It therefore misses the point. The term ‘diagnostic agents’ could mean almost anything, and of course includes a wide range of agents for *in vitro* as well as possibly *in vitro* use. The Examiner’s translation of this very broad teaching to an unequivocal, specific teaching on radiopharmaceuticals, is believed invalid. Schott Glaswerke is silent on what the term ‘diagnostic solutions’ means. Appellant’s view is that the teachings of Schott Glaswerke are simply too broad to provide any specific motivation for a given class of ‘diagnostic agent’. Again, it seems that the Examiner does not recognise the possibility that selection inventions exist.

The Examiner argues (text bridging pages 10 and 11), that the ‘problem of leaching’ could be prevented. Appellant’s point out that the person skilled in the art would not be seeking to solve such a problem, since there is no teaching or suggestion in Crane that vial leaching is a problem for radiopharmaceuticals which are metal complexes of ligands. The alleged “benefit” referred to by the Examiner simply does not exist as a motivation to combine.

The Examiner argues (page 11) that “Neither Walther/Yamaguchi/Schott Glaswerke teach the criticality of the pharmaceutical agent....”. That, in fact, tallies with appellant’s analysis. Thus, the teachings of the prior art relate to a range of possible vial coatings together with a range of possible vial contents. Appellants have a selection invention whereby certain specific combinations have unforeseen advantages. The Examiner has effectively acknowledged that the prior art provides little or no teaching on the importance of the vial contents (since the disclosures relate primarily to the coatings). Appellant’s invention is to a

specific combination of [vial contents] with a [specific coating; i.e. silica], which combination has unforeseen advantages.

The Examiner also argues that the ‘solubilization aids’ taught to be essential by Crane are not relevant to the combination with Yamaguchi. The Examiner confirms (page 13) that the prior art does not teach which is better for solving adsorption problems: ‘solubilization aids’ or silica-coated vials. That supports appellant’s position – the person skilled in the art would be placed in considerable doubt as to how to proceed, e.g., choosing one or the other, or a combination of solubilizer/coated vial. As argued previously, the overriding concern must surely be that Crane teaches the solubilization aid to be essential, so the person skilled in the art would be loath to dispense with that feature in the absence of any evidence that the silica-coated vial was at least as good. That situation could only be resolved by additional experimentation. Such an uncertain situation is again clear evidence that no clear motivation to combine exists, since there could be no clear expectation of an improvement. In this regard the Examiner again alludes to “other advantages taught by Yamaguchi”, viz. the accurate measuring of vial contents. As argued above, that is irrelevant to the silica coating so no such motivation exists.

Accordingly, Appellants respectfully submit that the instant application, including claims 1-14, is in condition for allowance. Favorable action thereon is respectfully requested.

### CONCLUSION

In view of the foregoing, Appellants respectfully request that the Board reverse the rejections of Claims 1-14 as set forth in the Office Action mailed July 24, 2008, that the Board allow the pending claims since they are in condition for allowance, and that the Board grant any other relief as it deems proper.

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Respectfully submitted,

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